The Lepidopterological Society of Japan

蝶と蛾 *Trans. lepid. Soc. Japan* **49** (4) : 245-270, October 1998

New and little known clearwing moths (Lepidoptera, Sesiidae) from the Philippine Islands

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Abstract Results of recent field studies on clearwing moths (Sesiidae) of the Philippine Islands are presented. A new genus, *Scoliokona* gen. nov., type species *Sura tetrapora* Diakonoff, 1968, and six new species are described : *Cyanosesia treadawayi* sp. nov., *Cyanosesia meyi* sp. nov., *Trilochana illustris* sp. nov., *Melittia ferroptera* sp. nov., *Scoliokona heptapora* sp. nov. and *Nokona palawana* sp. nov. are described. The following new combinations are provided : *Cyanosesia pelocroca* (Diakonoff, 1968), comb. nov. and *Nokona heterodesma* (Diakonoff, 1968), comb. nov. One species *Melittia callosoma* Hampson, 1919 is redescribed and reported for the Philippines and Sulawesi, Indonesia, for the first time. Further new faunistical data are presented for *Trilochana triscoliopsis* Rothschild, 1925, *Melittia gorochovi* Gorbunov, 1988, *Melittia javana* Le Cerf, 1916, *Scoliokona tetrapora* (Diakonoff, 1968), *Sura cyanolampra* Diakonoff, 1968 and *Nokona heterodesma* (Diakonoff, 1968). Additionally the recently described *Cyanosesia philippina* Gorbunov & Kallies, 1998 is figured.

Key words Lepidoptera, Sesiidae, new genus, new species, Philippine Islands, taxonomy.

The clearwing moth fauna of the Philippine Islands is very little known. It was last summarised by Diakonoff (1968). Until the present day only 17 species of clearwing moths have been described from this huge archipelago with its high diversity and endemism.

Recently the senior author obtained a small but highly interesting collection of clearwing moths from Mr C. G. Treadaway (Limbach, Germany) for determination. On numerous expeditions he collected butterflies and moths on the Philippine Islands. Additional material was collected in 1997 on the Philippines by Dr W. Mey and Dr W. Speidel (both ZMHU) using artificial pheromone lures. With this comparable rich material there was a need to describe a number of new species and revise some data published by Diakonoff (1968). Further data concerning the distribution of some Philippine Sesiidae are also presented in this paper.

Methods

All labels of specimens mentioned in this paper are cited in detail. Different labels are separated by "/", different rows in one label by a comma.

Abbreviations

BMNH : British Museum (Natural History), London, Great Britain.
BMHH : Bishop Museum, Honolulu, Hawaii, U. S. A.
MUT : Zoological Laboratory, Faculty of Agriculture, Meijo University, Nagoya, Japan.
MNHP : Muséum National d'Histoire Naturelle, Paris, France.

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NHMW : Naturhistorisches Museum, Wien, Austria.
SMFL : Lepidoptera Collection Senckenberg-Museum, Frankfurt/Main, Germany.
USNM : United States National Museum, Washington D. C., U. S. A. (National Museum of Natural History).
ZMHU : Museum für Naturkunde, Zentralinstitut der Humboldt Universität, Berlin, Germany.
ZMKD : Zoologiske Museum, Copenhagen, Denmark.
CCT : Collection Colin G. Treadaway, Limbach, Germany (assigned to SMFL).
CAK : Collection Axel Kallies, Schwerin, Germany.
CWM : Collection Museum Witt, München, Germany.

ETA : External transparent area of forewing.
ATA : Anterior transparent area of forewing.
PTA : Posterior transparent area of forewing.

Tribe Sesiini Boisduval

***Cyanosesia treadawayi* sp. nov.** (Figs 1, 2, 19, 28)

Description. Male (holotype) (Fig. 1). Alar expanse 24.5 mm, body length 13.1 mm ; forewing 11.5 mm ; antenna 7.5 mm.

Head : antenna dorsally blackish brown, ventrally somewhat lighter, scape covered with yellow scales ; frons dark grey shining, with narrow white stripes laterally ; labial palpus black with some yellow scales ventrally, first joint basally yellow ; vertex black ; pericephalic hairs yellow. Thorax : (partly rubbed) dorsally black ; patagia black ; tegula black with some white scales internally ; mesothorax black, mixed with some white hair-like scales ; thorax ventrally black, mixed with some white scales ; a yellow spot between forewing base and head ; patches of yellow scales below each the forewing and the hindwing. Legs : fore coxa black with an undefined yellow stripe internally ; fore femur black, basal part with yellow stripe internally, distally orange ; fore tibia orange ventrally, black dorsally ; fore tarsus black mixed with orange scales ; mid leg black except distal half of femur with narrow orange edge, mid tibia with orange edge internally ; mid tarsus and hind legs broken off. Abdomen : (badly rubbed) black ; tergite 4 with some yellow white scales proximally ; other tergites entirely rubbed ; sternites 3, 4 and 5 black with narrow white stripes posteriorly ; other sternites rubbed.

Forewing : transparent ; veins and cilia black ; apical area weakly developed, black, broadened apically, with narrow black projections into each cell of ETA ; discal spot well developed with a small and narrow projection into ATA. Hindwing : transparent ; veins and cilia black ; discal spot undeveloped.

Male genitalia (holotype, genitalia preparation No. AK120-96) (Fig. 19). Uncus well-developed, with strong setae on inner surface ventro-apically ; tegumen relatively long and narrow ; gnathos weakly developed, somewhat asymmetric distally (Fig. 19a) ; valva (Fig. 19b) relatively narrow, with pointed apex, densely covered with simple strong setae in distal part, less densely in dorsal part and with a few setae at ventral margin ; crista sacculi well-developed, broadened basally, finger-shaped apically ; saccus (Fig. 19c) about as long as vinculum ; aedoeagus (Fig. 19d) longer than valva, with a group of dense, well-sclerotized, strong teeth dorso-apically.

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Female (paratype) (Fig. 2). Alar expanse 38.5 mm ; body length 21.5 mm ; forewing 17.0 mm ; antenna 10.5 mm.

Head : antenna dorsally fuscous, ventrally orange ; frons black with narrow white stripes laterally ; labial palpus black ; vertex black ; pericephalic hairs black. Thorax : dorsally badly rubbed, remaining scales black ; ventrally black. Legs : fore coxa black ; fore femur dorsally black, ventrally in proximal half black, in distal half orange ; fore tibia dorsally black, ventrally orange ; mid legs black ; mid femur in distal half orange ventrally ; mid tibia with some orange scales proximally ; hind leg black ; hind femur internally proximally yellow orange ; hind tarsus orange yellow internally. Abdomen : entirely black, but many scales lost ; anal tuft somewhat lighter.

Forewing : almost entirely bright orange ; costal margin black with some orange scales in the basal 2/3 of length ; vein Sc and Radius black, in between a narrow stripe of orange scales ; ATA and PTA mainly covered with orange scales, less densely basally ; ETA also almost completely covered with orange scales ; transparent areas in cells between veins M_2 and M_3 basally, M_3 and M_4 and Cu_1 and Cu_2 ; veins and discal spot partly covered with black scales ; cilia black. Hindwing : transparent, veins covered with orange and a few black scales ; discal spot undeveloped ; outer margin very narrow, orange internally, black externally ; cilia black.

Female genitalia (paratype, genital preparation No. AK42) (Fig. 28). Eighth sclerite and lamella postvaginalis well sclerotized, former with long setae at distal and ventral margin and surface ; posterior apophysis longer than anterior apophysis ; ostium bursae membranous, with numerous small spinules, antrum short and broad, membranous, crumpled, with a large asymmetrical sclerotization ; ductus bursae very short and broad, crumpled ; corpus bursae ovoid, without signum.

Diagnosis. The new species is closely related and similar to *Cyanosesia pelocroca* (Diakonoff), comb. nov., which is only known from the female holotype. The female of *C. pelocroca* differs from that of *C. treadawayi* in the colour of the forewings (purplish brown) and colouration of the abdomen (tergite 4 with broad orange yellow band anteriorly ; segment 7 bright orange yellow laterally).

Bionomics and habitat. Unknown. The moths were collected coupling on 30th June.

Distribution. Known only from Central Leyte.

Remarks. Since male and female in the genus *Cyanosesia* are highly different the finding of a mating couple is very interesting and important. The hitherto unsatisfactory generic position of *Glossosphecia pelocroca* Diakonoff has been solved with this.

Derivatio nominis. The species is named in honour of Mr C. G. Treadaway, Limbach (Germany), who for many years collected moths extensively on the Philippine Islands. He kindly gave us the possibility to investigate the clearwing moths of his collection.

Material examined. Holotype, ♂ (Fig. 1), P[hilippine]. I[slands]., C[entral]. Leyte, Mahaplag Hilusig, 700 m. Mt Balocaue, 30. VI. 1989, leg. Dodong, in copula male/genitalia examined by A. Kallies, prep. No. AK120-96 (CCT). Paratype. 1 ♀ (Fig. 2), same data, in copula female/genitalia examined by A. Kallies, prep. No. AK42 (CCT).

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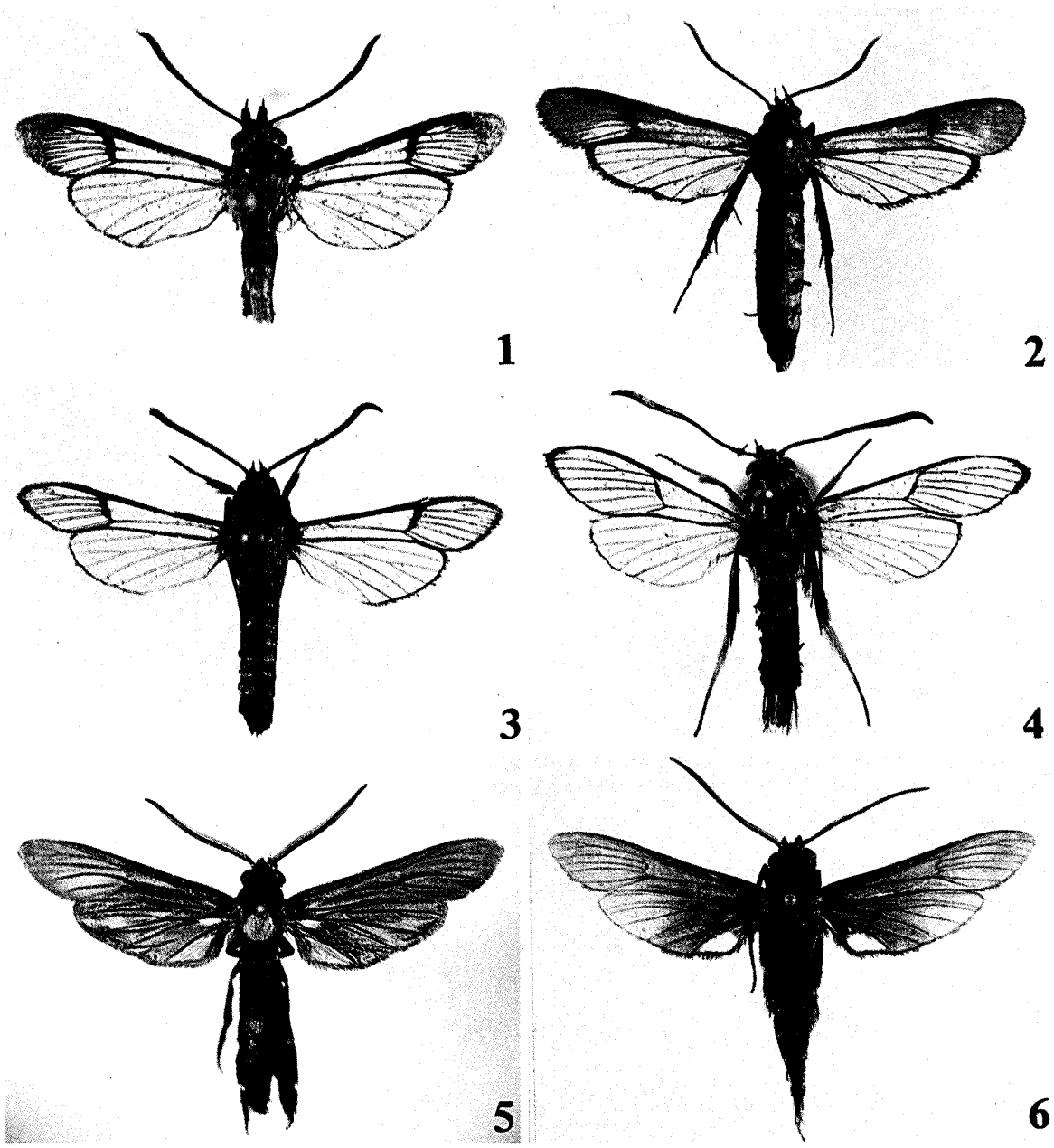

Figs 1–6. Sesiini. 1. *Cyanosesia treadawayi* sp. nov., ♂, holotype, Leyte (CCT). Alar exp. 24.5 mm. 2. *Ditto*, ♀, paratype, Leyte (CCT). Alar exp. 38.5 mm. 3. *C. meyi* sp. nov., ♂, holotype, Samar (CCT). Alar exp. 27.0 mm. 4. *C. philippina* Gorbunov & Kallies, ♂, paratype, Luzon (BMNH). Alar exp. 28.0 mm. 5. *Trilochana triscoliopsis* Rothschild, ♂, Leyte, (ZMHU). Alar exp. 62.0 mm. 6. *T. illustris* sp. nov., ♂, holotype, Mindanao (ZMHU). Alar exp. 56.0 mm.

Cyanosesia pelocroca (Diakonoff), **comb. nov.**

Glossosphecia pelocroca Diakonoff, 1968 : 225, figs 344, 706–707. Type locality : "Luzon, Los Banos". Holotype female, in USNM.

The species was described originally in *Glossosphecia*. However, according to the figures in Diakonoff (1968), the female holotype of *pelocroca* fundamentally differs from that genus.

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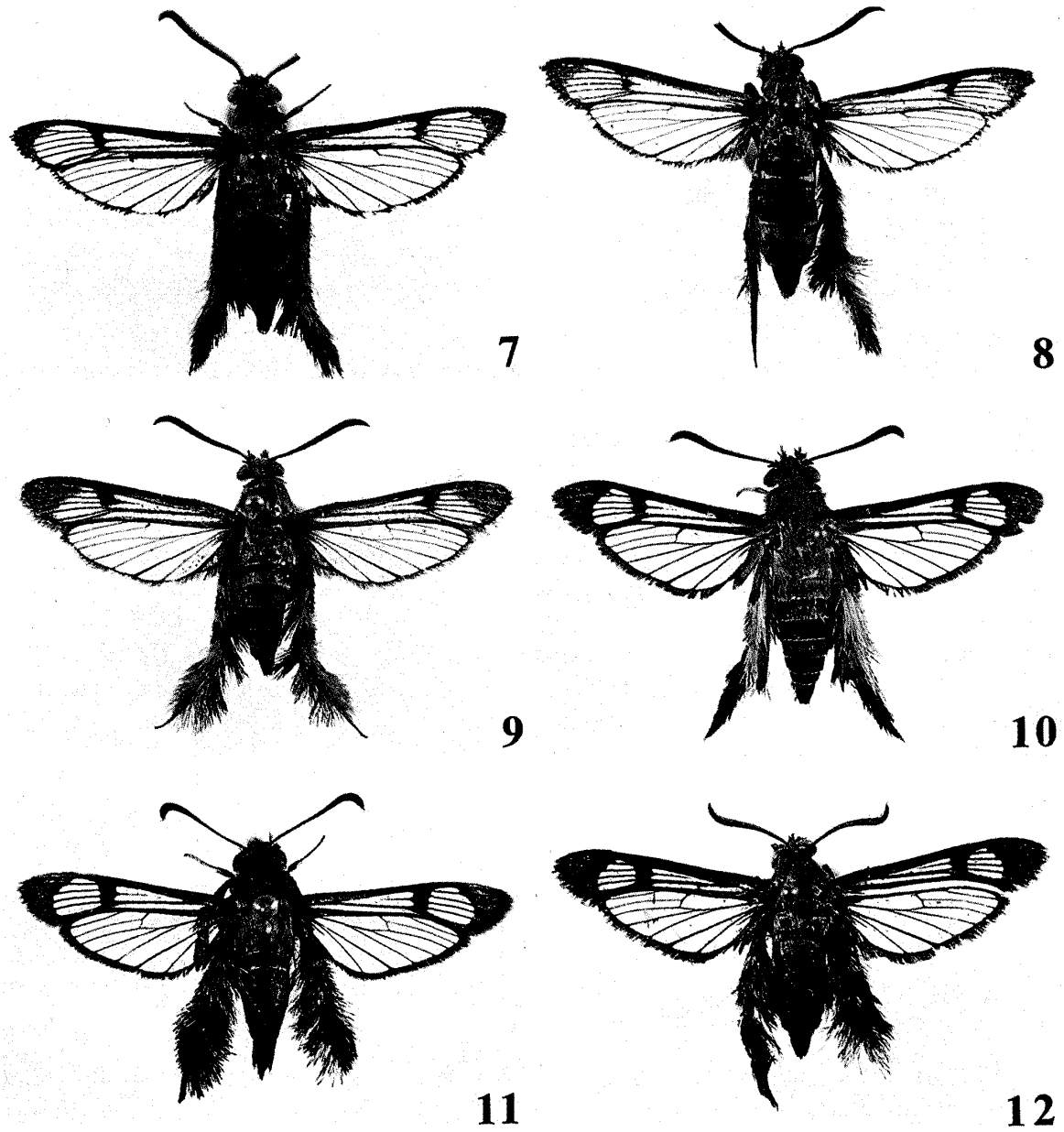

Figs 7–12. Melittiini. 7. *Melittia ferroptera* sp. nov., ♂, paratype, Cebu (CCT). Alar exp. complete. 8. *Ditto*, ♀, paratype, Mindanao (CCT). Alar exp. 38.0 mm. 9. *Ditto*, ♀, paratype, Philippines (SFML). Alar exp. 36.5 mm. 10. *M. gorochovi* Gorbunov, ♂, Luzon (MUT). Alar exp. 31.3 mm. 11. *M. callosoma* Hampson, ♂, Luzon (MUT). Alar exp. 27.6 mm. 12. *Ditto*, ♀, Mindanao (CCT). Alar exp. 36.5 mm.

Both in genitalia and external characters it is indeed very similar to the female of *Cyanosesia treadawayi* described above and has to be assigned to the same genus.

***Cyanosesia meyi* sp. nov.** (Figs 3, 20)

Description. Male (holotype) (Fig. 3). Alar expanse 27.0 mm, body length 14.5 mm; forewing 11.8 mm; antenna 8.0 mm.

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Head: antenna black; frons black shining, with narrow white stripes laterally; labial palpus black, medial joint mixed with white scales ventrally; vertex black brown; pericephalic hairs white. Thorax: black; patagia black with some yellow scales laterally; tegula black; mesothorax black, mixed with some white hair-like scales. Legs: fore coxa black with yellow edges internally; fore femur black, anterior margin bright orange red; fore tibia black dorsally, orange ventrally; fore tarsus black; mid coxa black, white yellow internally; mid femur black, bright orange red at anterior margin; other parts of mid leg black; hind legs broken off. Abdomen: black, tergites and sternites 4 and 5 with a very narrow white stripe anteriorly, sternites 6 and 7 with some white scales anteriorly, anal tuft black.

Forewing: transparent; veins and cilia black; discal spot developed; costal margin black, basally covered with red scales; outer margin narrow black with very narrow projections into cells between veins R_3 and M_2. Hindwing: transparent; veins and cilia black; discal spot and outer margin undeveloped.

Male genitalia (holotype, genital preparation No. AK 34) (Fig. 20). Uncus well-developed, with very strong setae on inner surface ventro-apically; tegumen relatively broad; gnathos weakly developed, somewhat asymmetrical distally (Fig. 20a); valva (Fig. 20b) with rounded apex, densely covered with simple strong setae in distal and dorsal part, with a few setae at ventral margin; crista sacculi well-developed, triangular, with a small transverse plate apically; saccus (Fig. 20c) relatively short; aedoeagus (Fig. 20d) longer than valva, with a group of well-sclerotized, strong teeth dorso-apically.

Female. Unknown.

Bionomics and habitat. Unknown; the holotype was collected on 10th September.

Distribution. Known only from Samar Island.

Derivatio nominis. The species is named after Dr Wolfram Mey, Zoological Museum of Humboldt University, Berlin (Germany), who contributes fundamentally to the knowledge of Lepidoptera and Trichoptera of the Philippine Islands. He also collected some of the clearwing moths mentioned in this article.

Material examined. Holotype, ♂ (Fig. 3), Phil[ippines]., E[ast]. Samar, near Taft, 10. IX. 1994. leg. Dodong/genitalia examined by A. Kallies, prep. No. AK34 (CCT).

Cyanosesia philippina Gorbunov & Kallies (Fig. 4)

Cyanosesia philippina Gorbunov & Kallies, 1998: 458, figs 2, 4. Type locality: "Surigao, Mindanao" [Philippine Islands]. Type male, in BMNH.

The species has recently been described from the Philippine Islands of Mindanao and Luzon (Gorbunov & Kallies, 1998).

Superficially it is close to *Cyanosesia meyi* sp. nov., but can be easily distinguished by the size of the discal spot of the forewing (narrower in *philippina*), the colouration of the abdomen (tergites 4, 5 and 6 each with a narrow yellow stripe anteriorly; sternite 1+2 with a large yellow spot anterior-laterally; sternites 3, 4, 5, 6, and 7 each with a narrow yellow stripe proximally in *philippina*), by the shape of the ETA (usually with narrow projections arising from distal margin into cells R_3 to M_3), and by the male genitalia (*cp.* to Fig. 3 in Gorbunov & Kallies, 1998).

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Material examined. Holotype, ♂, Surigao, Mindanao [Philippines, northern Mindanao Island, Surigao] (BMNH). Paratypes. 1 ♂ (Fig. 4), Imugan, Luzon [Philippines, Luzon Island] (BMNH); 1 ♂, Philippines, [South East Luzon] Camarines Sur: Mt Isarog, 750–900 m, 4–7. V. 1963/H. M. Torrevillas, Collector, Bishop (BMHH).

Trilochana triscoliopsis Rothschild (Fig. 5)

Trilochana triscoliopsis Rothschild, 1925: 208. Type locality: "Butuan, Mindanao" [Philippine Islands]. Type male, in BMNH; Gaede, 1933: 788; Diakonoff, 1968: 227; Heppner & Duckworth, 1981: 44.

The species was described from a single male holotype from Mindanao. Here we can report it from Leyte Island for the first time. The formerly unknown female is superficially identical to the males.

Variability. The species apparently does not very much vary in colouration. Alar expanse of males from Leyte 62 to 67 mm, male holotype from Mindanao 76 mm. Alar expanse of female 75.7 mm.

Bionomics and habitat. Unknown. The few known specimens were collected in jungle at altitudes of 500 to 650 m in April and August. The males from Leyte I. were unspecifically attracted by artificial pheromone lures in the late morning hours.

Material examined. 1 ♀, P[ilippine]. I[slands].; Mindanao, Z. Del Sur, 11 km NW of Milbuck, 500 m, 4. VIII. 1958/in jungle/Light Trap, H. E. Milliron (BMHH); 2 ♂, Philippinen, Leyte, Lake Danao, 650 m, 14–17. IV. 1997, leg. Mey & Speidel (ZMHU).

Trilochana illustris **sp. nov.** (Figs 6, 21)

Description. Male (holotype) (Fig. 6). Alar expanse 56.0 mm; body length 34.0 mm (without anal tuft); forewing 26.0 mm; antenna 16.5 mm.

Head: antenna fuscous, slightly clavate, bipectinate; frons brown with a narrow white stripe laterally; labial palpus brown-black; vertex black; pericephalic hairs black. Thorax: dorsally and ventrally black; patagia black with strong bluish lustre; tegula black with some bluish lustre. Legs: black with a little bluish lustre; fore coxa with white scales basally; hind tibia with tufted black hairs, with a patch of white hairs dorso-medially and some white hairs basally. Abdomen: long and slender, brownish black with bluish lustre, especially on tergites 3, 4 and 5; anal tuft dorsally black-grey with a tuft of very long (up to about 10 mm), very fine hair-like scales, ventrally with some yellow-white scales.

Forewing: entirely scaled, predominantly translucent, yellow brownish with violet sheen, basally towards costal margin and between cubitus and anal margin blackish blue with a strong violet sheen. Hindwing: entirely scaled, translucent in outer half, blackish blue with a strong violet sheen towards base; a transparent area between A_2 and anal margin.

Male genitalia (paratype, genital preparation No. AK24) (Fig. 21). Uncus long and well-developed, with long hair-like setae on inner surface and short setae on outer surface ventro-apically; tegumen relatively short; gnathos well-developed, with two strong, apically fused lateral arms (Fig. 21a); valva (Fig. 21b) broad, quadrangular, densely covered with simple setae in distal part and close to ventral margin, a group of simple strong setae in medial part; saccus (Fig. 21c) short, about as long as vinculum; aedoeagus (Fig. 21d) about as long as valva, with a well-sclerotized bulging margin dorso-apically, vesica with numerous short

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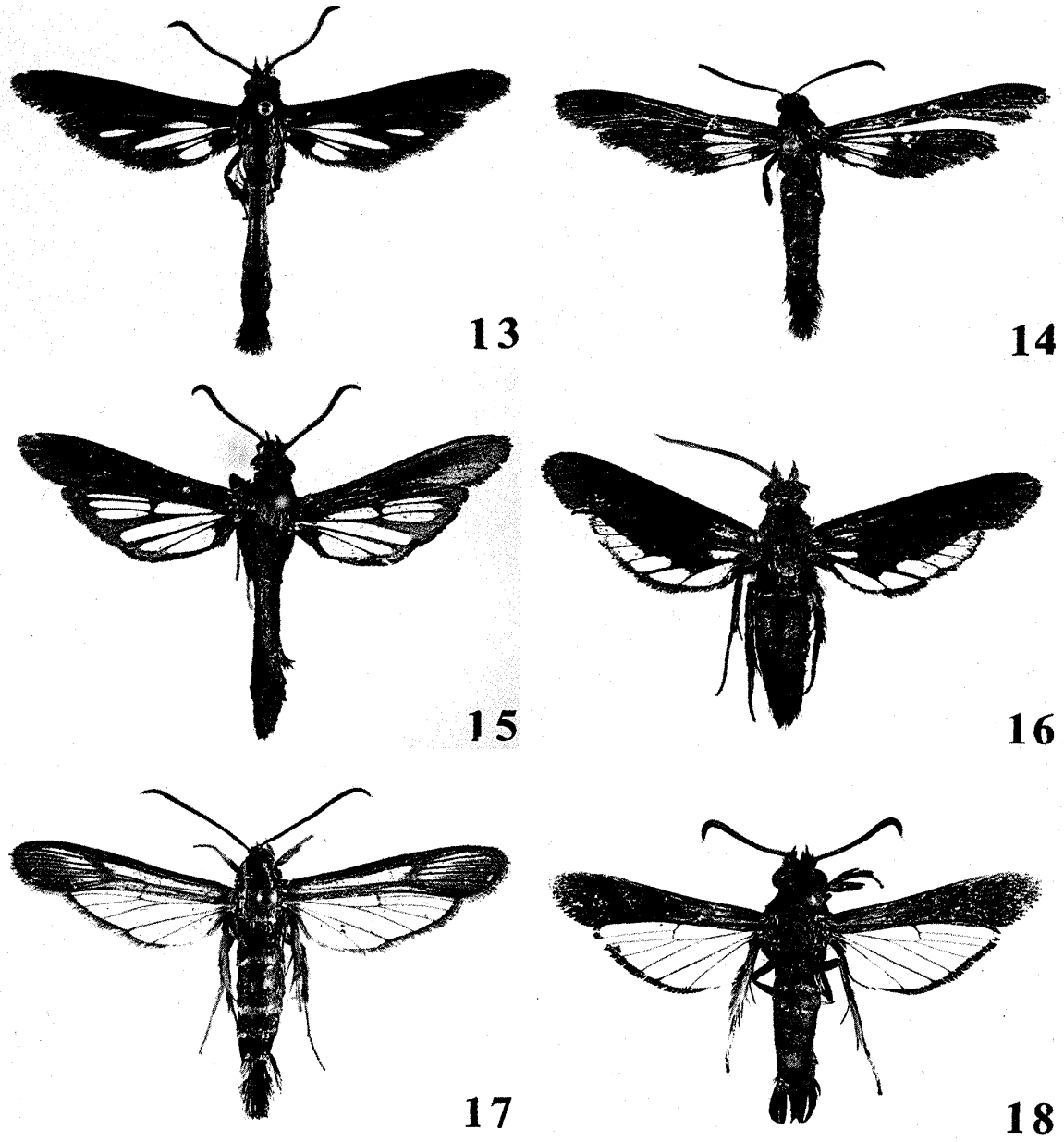

Figs 13–18. Paranthrenini. 13. *Scoliokona tetrapora* (Diakonoff), ♂, Mindanao (ZMHU). Alar exp. 48.0 mm. 14. *Ditto*, ♀, Luzon (NHMW). Alar exp. 44.0 mm. 15. *S. heptapora* sp. nov., ♂, holotype, Leyte (ZMHU). Alar exp. 39.0 mm. 16. *Sura cyanolampra* Diakonoff, ♀, Luzon (MUT). Alar exp. 36.2 mm. 17. *Nokona heterodesma* (Diakonoff), ♀, Negros (CCT). Alar exp. 38.0 mm. 18. *N. palawana* sp. nov., ♂, holotype, Palawan (ZMKD). Alar exp. 31.0 mm.

spines.

Female. Unknown.

Variability. Alar expanse between 56 and 59 mm.

Diagnosis. The species clearly belongs to the genus *Trilochana* but can not be confused with any congeners. It is unique in its light brownish yellow, predominantly translucent wings. All other known species of *Trilochana* have almost completely blackish blue or green wings.

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Bionomics and habitat. The type specimens were collected at an altitude of about 90 m in April.

Distribution. Known only from the type locality on Mindanao.

Material examined. Holotype, ♂ (Fig. 6), Philippinen, [Mindanao], Quezon, Infanta, Magsaysay, 9–10. IV. 1997, 90 m, leg. Mey & Speidel (ZMHU). Paratype. 1 ♂, same date/ genitalia examined by A. Kallies, prep. No. AK24.

Tribe Melittiini Le Cerf

***Melittia ferroptera* sp. nov** (Figs. 7, 8, 9, 22, 29)

Melittia gigantea: Diakonoff, 1968: 233, figs 719, 721 (misdetermination, *nec* Moore, 1879).

Description. Male (holotype). Alar expanse 37.0 mm; body length 18.5 mm; forewing 16.5 mm; antenna 8.0 mm.

Head: antenna black; frons yellow grey shining, laterally yellow white; labial palpus with admixture of orange and black scales, basal joint laterally with small tuft of black scales; vertex black, mixed with orange scales; pericephalic hairs orange yellow. Thorax: (somewhat rubbed dorsally) black, with orange scales brown; patagia black with orange scales laterally; tegula black, basally with some orange scales, distally with orange hair-like scales; mesothorax with some yellow scales medially and orange to grey hair-like scales submedially; thorax ventrally dark grey with some yellow scales and orange hair-like scales below wings. Legs: fore coxa black, orange basally and some orange scales at outer margin; fore femur and tibia with admixture of black and orange scales; fore tarsus orange; mid and hind coxae black; mid and hind femora black with yellow anterior margin, a small tuft of orange scales at posterior margin distally; mid tibia with long tufted scales, black, orange medially and distally, a small patch of white scales medio-externally; spurs black and orange; mid tarsus orange; hind tibia with long tufted scales dorso-externally, black, orange medially, distally and apically, a small white patch latero-externally; spurs black and orange; hind tarsus dorsally with long tufted mainly orange scales; hind leg tuft internally almost entirely black. Abdomen: black, tergite 2 with narrow orange yellow stripe posteriorly; tergite 3 with loosely scattered orange scales medially; tergite 4 with narrow pale yellow stripe latero-posteriorly; tergite 5 densely covered with orange scales medially; tergite 6 loosely scattered with orange scales; tergite 7 with narrow bright orange yellow stripe posteriorly; sternites black; sternites 3 to 7 with orange scales at posterior margin; anal tuft black, orange apically.

Forewing: veins brown, transparent areas somewhat rusty brownish; ETA well-developed with cell between Cu_1 and Cu_2 and angle between R_4 and R_5 transparent; apical area narrow, brownish; discal spot reddish brown with narrow projection into ATA; cilia black grey; underside same, but somewhat darker. Hindwing: transparent, somewhat rusty; discal spot narrow; anal area ochre brown; cilia black grey, ochre brown at anal margin.

Male genitalia (paratype, genital preparation No. AK 2) (Fig. 22). Gnathos (Fig. 22a) small; valva (Fig. 22b) relatively short, ventral lobe relatively short, not reaching distal margin of valva; saccus (Fig. 22c) long and narrow; aedoeagus (Fig. 22d) longer than valva.

Female (paratype) (Fig. 28). Alar expanse 38 mm; apical area somewhat broader; angle between R_4 and R_5 not transparent; tergites 2–6 with yellow stripes posteriorly; tergites 3,

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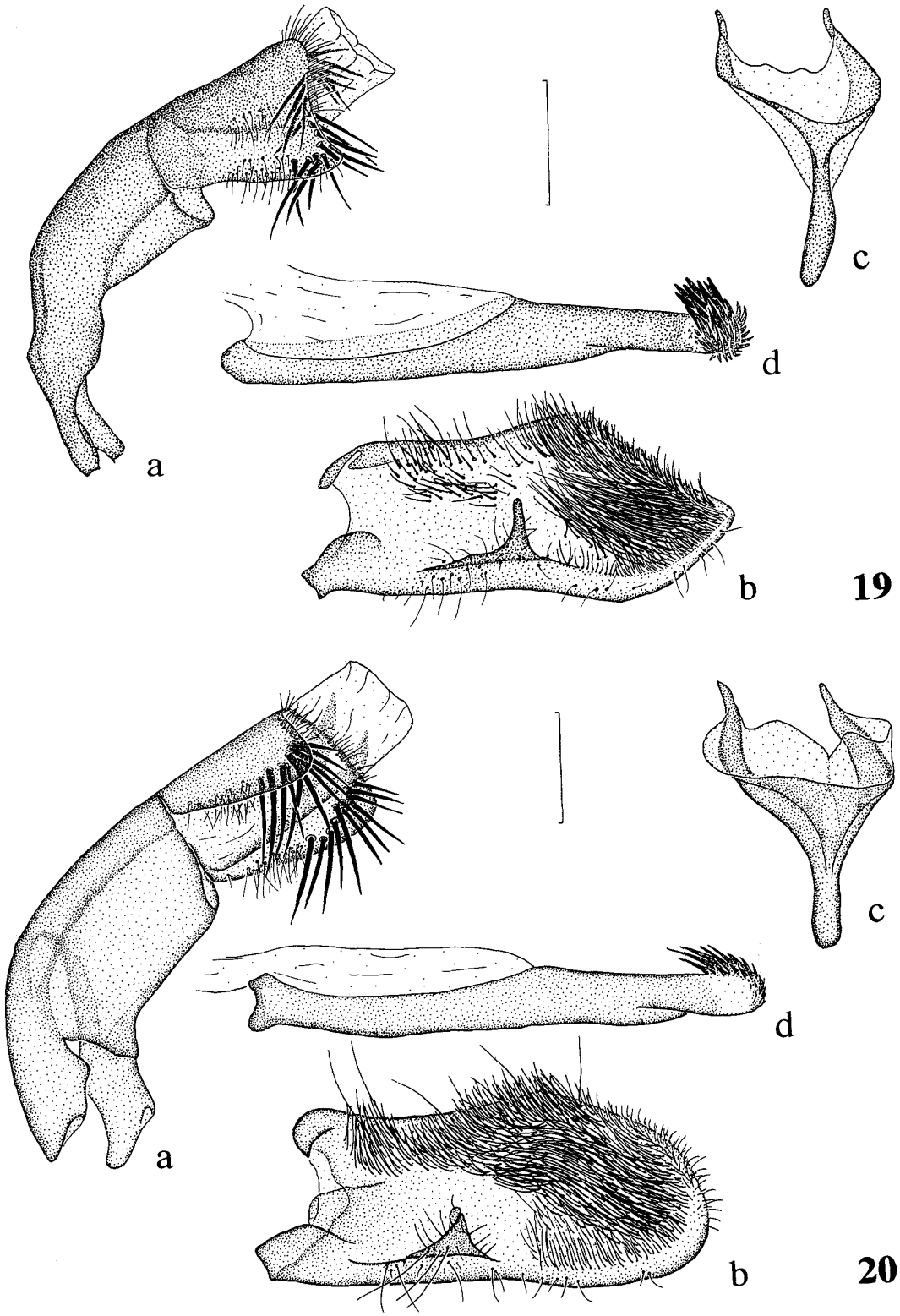

Figs 19–20. Male genitalia. 19. *Cyanosesia treadawayi* sp. nov., holotype (genital preparation No. AK120-96) (CCT). 20. *C. meyi* sp. nov., holotype (genital preparation AK34) (CCT). a. Tegumen-uncus complex. b. Valva. c. Saccus. d. Aedoeagus. Scale bar : 0.5 mm.

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5 and 6 dorsally with orange scales, sternites and anal tuft as in male.

Female genitalia (paratype, genital preparation No. AK 1) (Fig. 8). Eighth tergite relatively broad, with strong setae at distal and ventral margins; anterior apophysis somewhat longer than posterior apophysis, with a long narrow appendix ventro-basally; ostium bursae ring-shaped, well-sclerotized; antrum and ductus bursae long and narrow, membranous; corpus bursae large, ovoid; signum small and narrow, pointed anteriorly, consisting of numerous small, weakly sclerotized spines.

Variability. Alar expanse in males between 30 and 37 mm, in females 36–38 mm; in two males the apical area broadened as in females, with angle between R_4 and R_5 not transparent; in one female (Fig. 9) the apical area broadened towards extremity with transparent area in cell between R_3 and R_4/R_5 very small.

Diagnosis. Close to *M. tabanus* Le Cerf, 1916, but discal spot narrower, ETA wider; hind leg tuft mainly orange dorso-laterally (mainly black with small patches of yellow scales in *tabanus*); spurs black with long orange yellow scales (black in *tabanus*); anal tuft ventro-apically orange (black with white scales in *tabanus*); sternites with narrow orange stripes posteriorly (yellow white in *tabanus*); coloured parts of body and legs orange (pale orange yellow in *tabanus*); mid coxa black (white in *tabanus*). There are also differences in the genitalia: gnathos small, but somewhat longer than in *tabanus*; ventral lobe in valva somewhat broader and shorter than in *tabanus*, not reaching distal margin of valva.

M. ferroptera sp. nov., like *M. rutilipes* Walker, [1865], belongs to the *M. tabanus* species group: discal spot of forewing undefined, reddish brown; cell between Cu_1 and Cu_2 transparent; saccus in male genitalia long and narrow; signum of corpus bursae in female genitalia narrow, weakly sclerotized; appendix of anterior apophysis well-developed.

Bionomics and habitat. The host plant is unknown. Adults were collected in March, April, June and August at altitudes of 650 to 1,500 m.

Distribution. This species is known from a number of Philippine Islands: Leyte, Mindanao, Cebu, and Luzon. Three specimens from the Semper collection (SMFL) according to handwritten notes were collected on Camiguin de Mindanao or Bohol Island.

Material examined. Holotype, ♂, Philippinen, Leyte, Lake Danao, 650 m, 14–17. IV. 1997, leg. Mey & Speidel (ZMHU). Paratypes. 2 ♂ with same data as holotype; 1 ♂ (Fig. 7), Phil[ippines]., Cebu Is[land], Buhisan Dam, 22. VIII. 1996, leg. Dodong (CCT); 1 ♂, same data, but 5. VIII. 1995, leg. Dodong/genitalia examined by A. Kallies, prep. No. AK2 (CCT); 1 ♀ (Fig. 8), Phil[ippines]., Mindanao S[outh] E[ast], Mt Tagubod, 15. III. 1996, 1,500 m (day), leg. Danny/genitalia examined by A. Kallies, prep. No. AK1 (CCT); 1 ♂ 1 ♀ (Fig. 9), 84 [Philippines, Camiguin de Mindanao or Bohol Island]/coll. C. Semper (♂ with genitalia examined by A. Kallies, prep. No. AK93-96) (SMFL); 1 ♂, 84 [Philippines, Camiguin de Mindanao or Bohol Island]/*Melittia chalciformis*. Fab. [sic !]/coll. C. Semper (SMFL); 1 ♂, Philippines [Central Luzon], Ifugao Prov., Liwo, 8 km E Mayoyao, 1,000–1,300 m, 2–6. VI. 1967/L. M. Torrevillas, Collector, Bishop Museum (BMHH).

Melittia callosoma Hampson (Figs 11, 12, 23, 30)

Melittia callosoma Hampson, 1919: 92. Type locality: "Borneo, Sarawak, Ulu Lawas" [Malaysia]. Holotype male, in BMNH.

Melittia eurytion: Dalla Torre & Strand, 1925: 139; Gaede, 1933: 790; Heppner & Duckworth, 1981:

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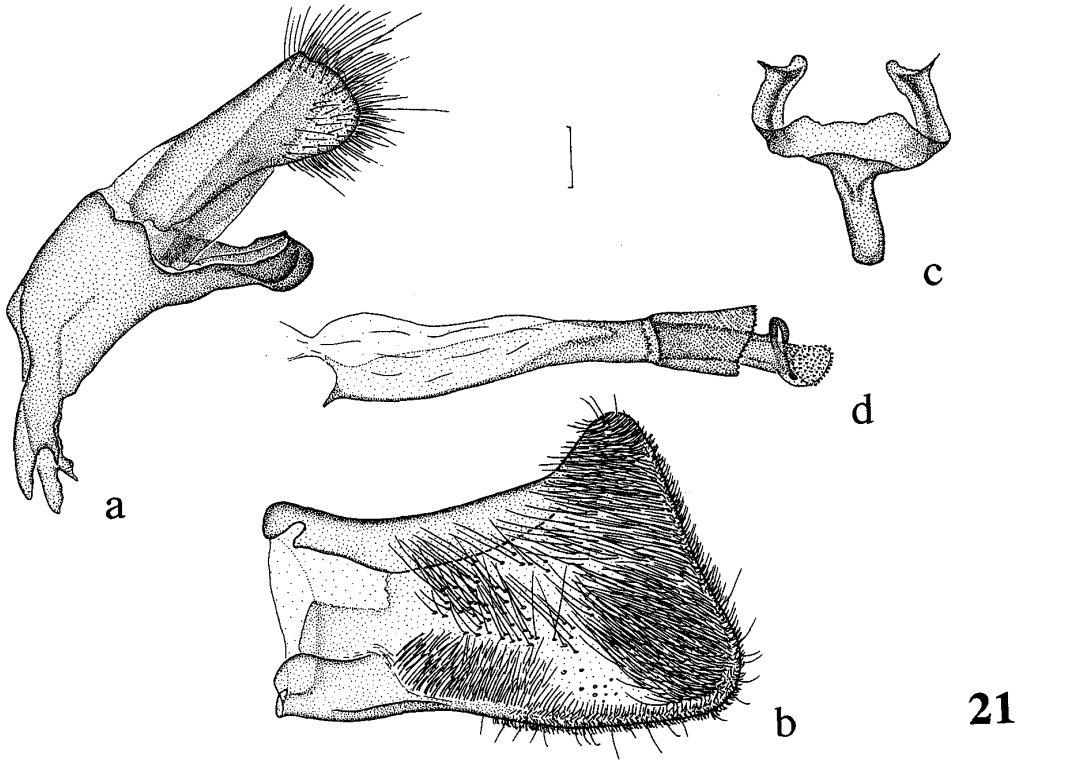

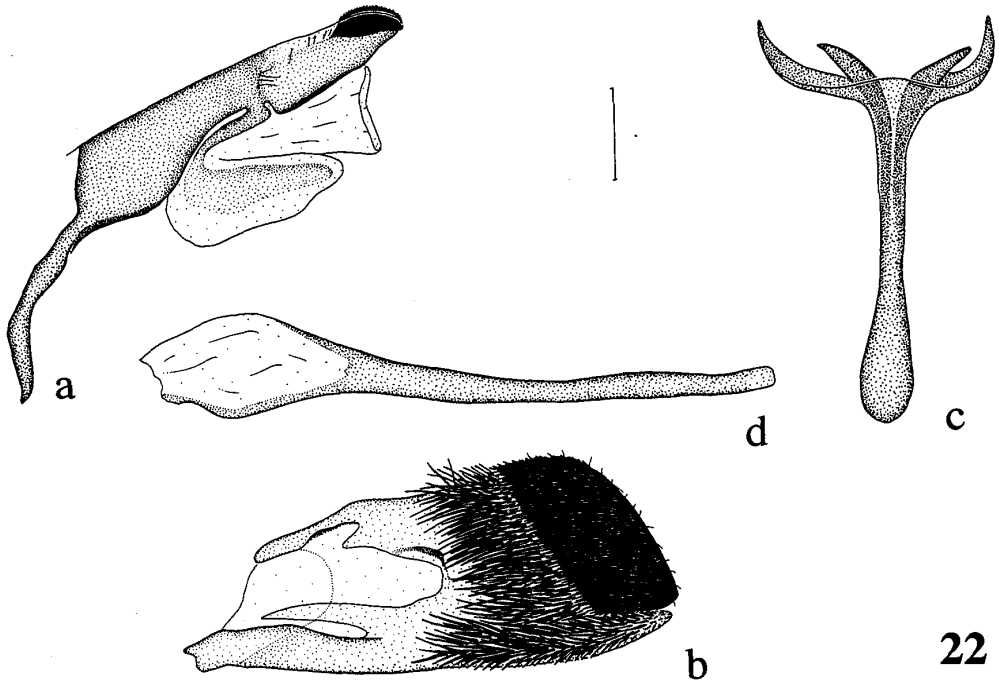

Figs 21-22. Male genitalia. 21. *Trilochana illustris* sp. nov., paratype (genital preparation No. AK24) (ZMHU). 22. *Melittia ferroptera* sp. nov., paratype (genital preparation AK2) (CCT). a. Tegumen-uncus complex. b. Valva. c. Saccus. d. Aedoeagus. Scale bar : 0.5 mm.

26 ; Diakonoff,1968 : 233, figs 726-727 (misdetermination, *nec* Westwood, 1848).

The species was described from a male taken in North Borneo and was also reported from

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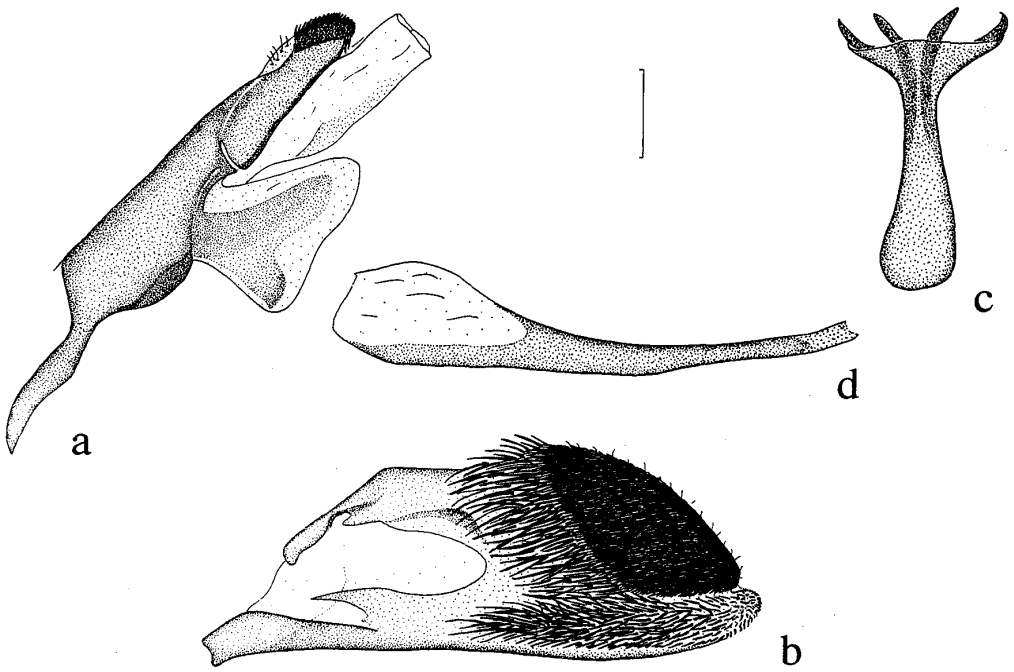

Fig. 23. Male genitalia of *Melittia callosoma* Hampson (genital preparation No. AK119-96) (CCT). a. Tegumen-uncus complex. b. Valva. c. Saccus. d. Aedoeagus. Scale bar: 0.5 mm.

Sumatra (Hampson, 1919). The genitalia of the type specimen were not examined yet, but fresh material from Northern Borneo which was found to be superficially identical to the type has been investigated in detail. Additional material from the Philippines and from Sulawesi was found to be conspecific, too.

Redescription. Male (Fig. 11). Alar expanse 33.0 mm; body length 15.5 mm; forewing 15.0 mm; antenna 7.0 mm.

Head: antenna blackish brown dorsally, brown ventrally; frons blackish, shining, with white stripes laterally; labial palpus black, mixed with cream-white scales ventrally, cream-white basally; vertex black; pericephalic hairs black. Thorax: patagia reddish brown anteriorly, black posteriorly, cream-white laterally; tegula black, mixed with reddish brown scales; metathorax with olive yellow hairs laterally; thorax ventrally black mixed with cream-white scales. Legs: fore coxa cream-white ventrally, black and white mixed dorsally; mid leg tuft black with three small patches of light blue metallic shining scales; hind leg tuft black, laterally with small patches of white hairs; dorsally mixed with few white hairs. Abdomen: dorsally black; tergites with reddish brown scales anteriorly, tergites 2, 3 and 4 laterally with narrow yellow white stripes posteriorly; tergites 5, 6 and 7 with only a few yellow white scales posteriorly; sternites 1+2 black, white medially; sternites 3–7 white; anal tuft black, white apically.

Forewing: veins black; basally with long yellow scales; ETA consisting of five cells, cell between R_3 and R_4/R_5 very small; apical area black, relatively broad; covered with bluish scales; discal spot small with a long and narrow projection into ATA. Hindwing: veins black; basally with some yellow scales; anal area black, partly covered with yellow-white, somewhat bluish shining scales.

Male genitalia (genital preparation No. AK119-96) (Fig. 23). Similar to *Melittia eurytion*

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(Westwood, 1848) (*cp.* Gorbunov & Arita, 1996). Gnathos rather large, with a bilobed slightly sclerotized plate medially (Fig. 23a); valva with distal field of setae well separated from medial one; setae of medial field not reaching pocket-shaped crista; ventral lobe of valva narrow, well exceeding the distal margin (Fig. 23b); saccus fairly short and broad (Fig. 23c); aedoeagus about as long as valva (Fig. 23d).

Female (Fig. 12). Alar expanse 37.0 mm; body length 17.0 mm; forewing 16.0 mm; antenna 7.0 mm.

Female genitalia (genital preparation No. AK17) (Fig. 30). Similar to *Melittia eurytion* (Westwood, 1848) (*cp.* Gorbunov & Arita, 1996). Anterior apophysis somewhat longer than posterior apophysis, ventro-basal appendix very narrow, connection to apophysis reduced; corpus bursae ovoid; signum relatively narrow, with 6 to 7 transverse rather well-sclerotized, dentate stripes anteriorly, and few lengthwise stripes posteriorly.

Variability. Alar expanse in Philippine males 33–35 mm, in females 36–37 mm.

Diagnosis. The species is similar to *Melittia eurytion* (Westwood, 1848) but can be distinguished by the following characters: discal spot smaller, ETA usually two times broader than discal spot (discal spot broad, ETA usually as broad as discal spot), thorax with yellow hair-like scales close to wing base (without in *eurytion*). There are also some differences in the male genitalia: ventral lobe of valva longer, well-exceeding distal margin of valva; saccus shorter, aedoeagus shorter. In female genitalia there are differences in the size of signum (larger in *eurytion*) and the development of the narrow ventral appendix of the anterior apophysis (clear connection of apophysis and appendix in *eurytion*).

Bionomics and habitat. The host plant is unknown. Specimens were collected between 400 and about 1,500 m altitude, in Northern Borneo in May and June, in the Philippines in March, June and August, in Sulawesi I. in November and April.

Distribution. Northern Borneo, Malaysia and Sumatra, Indonesia (Hampson, 1919). New records: Philippine Islands (Mindanao, Negros, Mindoro, Luzon) and Sulawesi (Indonesia).

Remarks. Most likely the specimens from Sulawesi represent a distinct subspecies: they are somewhat smaller and in female the ETA is more narrow (consisting of three cells only). Since only very few specimens could be studied, further investigations are necessary.

Material examined. 1 ♂, Phil[ippines]., Mindanao S[outh] E[ast], Mt. Tagubod, 15. III. 1996, 1,500 m (day), leg. Danny/genitalia examined by A. Kallies, prep. No. AK119-96 (CCT); 1 ♀, P[hilippine]. I[slands]., Mindanao, Bukidnon, Mt Imagao, 3800, 1. VI. 1979, leg. Treadaway/genitalia examined by A. Kallies, prep. No. AK17 (CCT); 1 ♀, Phil [ippines], Mindanao, S[outh]. Cotabato, 30. III. 1994, leg. Villau (CCT); 1 ♂. Phil [ippines], Negros Or., 400 m, Bais, 30. VIII. 1983, leg. Dodong (CCT); 1 ♀, Mindoro sept., Calapan 1890–91. Platen./mir unbekannt, zur Beschreibung kaum geeignet (Semper) (ZMHB); 1 ♂, Pellmell Ck., Benguet Prov., Luzon, Philippines, 14. VI. 1977, leg. Y. Kurosawa (MUT); 1 ♂, (Malaysia), Bunsit, Keningau, alt. About 400 m, Sabah, Borneo, 18. V. 1984, Shinji Nagai leg./*Melittia callosoma* Hampson, 1919, O. Gorbunov & Y. Arita det. 1995 (MUT); 1 ♂, 5. VI. 1985, Keningau 800 m, Sabah, Malaysia, Hasegawa leg./ *Melittia callosoma* Hampson, 1919, O. Gorbunov & Y. Arita det. 1995 (genitalia on slide 1647 Arita) (MUT); 4 ♂ 1 ♀, S[outh]. Celebes [Indonesia, Sulawesi], maros, Bantimurung, 10. IV. 1996, native collector (1 ♂ genitalia on slide 1711 Arita) (MUT); 2 ♂, same data but XI. 1995 (coll. Fukuzumi, Nagoya).

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Melittia javana Le Cerf

Melittia javana Le Cerf, 1916 : 8, pl. 373, fig. 3118. Type locality : "Java occident, Mont Gede, 4000" [W Java, Mt Gede]. Lectotype male, in MNHP ; Arita & Gorbunov, 1996 : 149, figs 9–12, 43, 50, 60, 68.
Melittia amboinensis Felder, var. *javana* : Le Cerf, 1917 : 197.
Melittia amboinensis Felder, var. : Hampson, 1919 : 88 ; Dalla Torre & Strand, 1925 : 138.
Melittia amboinensis Felder, f. : Gaede, 1933 : 789.
Melittia amboinensis : Heppner & Duckworth, 1981 : 27 (*nec* Felder, 1861).

The species has been revised by Arita and Gorbunov (1996). It was known from Sumatra and Java (Indonesia) and from Negros (Philippine Islands). Here we report the first records from the Philippine Islands of Mindanao and Siquijor.

Bionomics and habitat. The host plant is unknown. Specimens from Negros were collected in May, June and August, from Siquijor in April, from Mindanao in October.

Material examined. 1 ♂, Philippines, Negros I., Mt Canlaon, 3. VI. 1991, leg. Arimas (CCT) ; 1 ♀, [Philippines] Negros [I.], Mt Canlaon, 15. V. 1996, leg. Domingo (CCT) ; 1 ♀, Phil[ippine]., Negros I., Mt Mandalagan, 29. VIII. 1993, leg. Arimas (CCT) ; 1 ♀, [Philippines] Siquijor I., Tongo Point, 19. IV. 1993, leg. Dodong/genitalia examined by A. Kallies, prep. No. AK9 (CCT) ; 1 ♀, [Philippines] W[est] Mindanao, 1000, Mis Occ., Mt Malindang, 10. X. 1981, leg. Dodong (CCT).

Melittia gorochovi Gorbunov (Fig. 10)

Melittia gorochovi Gorbunov, 1988 : 195, figs 3, 4. Type locality : Vietnam, Shonla Prov., Shongma. Holotype male, coll. O. Gorbunov ; Gorbunov & Arita, 1996 : 324–326, figs 1, 2, 9.
Melittia indica : Le Cerf, 1917 : 182 (part.), pl. 476, fig. 3922 (misdetermination, *nec* Butler, 1874).

The species was redescribed in detail by Gorbunov & Arita (1996). Until recently it was known only from Vietnam, Thailand and Sikkim (NE India). Here we report the first records from China (Yunnan), Laos, Myanmar (Burma), and the Philippines. This extends the range of distribution from the south Asian mainland to the Philippine archipelago.

The specimen from Luzon (Philippines) differs from specimens from the mainland in the presence of a small transparent cell in the angle of veins R_4 and R_5. However, there are no additional differences either in external or genitalic characters which would support species difference.

Material examined. 1 ♂, China, Yunnan, *ca.* 1,400 m, Near Mengul, way to the Botanical Gardens, 21.45N, 101.15E, 23. VI. 1993, leg. C. G. Treadaway (CCT) ; 2 ♂, N[orth] Laos, Xieng Khouang, IV. 1996, native collector (MUT) ; 1 ♂, Thailand, Wang Ghin, Phrae, 30. X. 1988 (CWM) ; 1 ♂, N. Thailand, Strasse Pai-Chiangmai km 18.6, Mafka Wasserfall, 15. III. 1994, leg. St. Naumann (CWM) ; 1 ♂, Burma C[entral]., Kalaw-Taunggyi env. 1,000–1,200 m, 19. III. 1997, leg. Obydov, Tarasov & Saldaitis (CAK) ; 1 ♂, Philippines, Luzon I., S. E., Mt Isarog, III. 1981 (genitalia on slide 1649 Arita) (MUT).

Tribe Paranthrenini Niculescu

***Scoliokona* gen. nov.** (Figs 13, 14, 15, 24, 25, 26, 31)

Type species. *Sura tetrapora* Diakonoff, 1968 (Figs 13, 14, 24, 25, 31).

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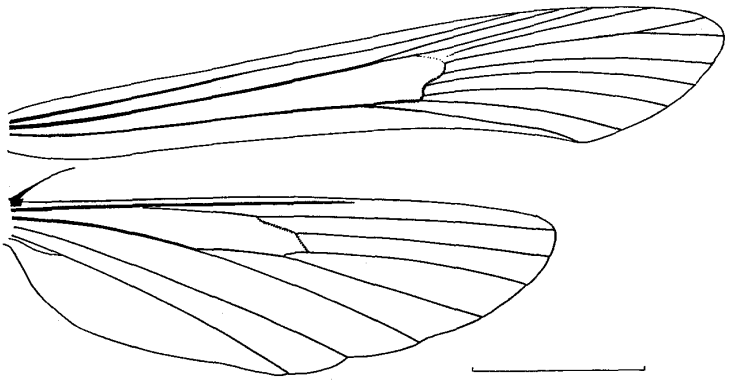

Fig. 24. Wing venation of *Scoliokona tetrapora* (Diakonoff). Scale bar: 5.0 mm.

Diagnosis. The genus *Scoliokona* gen. nov. is characterised by its unique appearance: abdomen long and slender, somewhat depressed, forewings very narrow, completely bluish black, hindwings scaled, with small to large transparent areas, labial palpus tufted, and angle between cross vein and M_3 narrow. Additionally, the new genus differs from all related genera in the genitalia (see below).

Description. Medium sized to large moths with alar expanse 38 to 48 mm. Body, legs and wings mainly black with blue metallic sheen. Antenna in both sexes clavate, in male bipectinate. Proboscis well developed. Maximum width of head somewhat less than that of thorax. Labial palpus long, about 2.5 times as long as maximum diameter of eyes; basal and medial joint with long and tufted scales, medial joint with white tipped scales; apical joint short, with appressed scales. Abdomen long and slender, in segments 2, 3 and 4 somewhat depressed both laterally and ventro-dorsally; covered densely with small appressed scales, with patches of long specialised scales on segments 6 and 7 both ventrally and dorsally. Forewing almost entirely black with blue metallic sheen, especially on underside; very narrow; veins R_4 and R_5 long stalked, other veins separate (Fig. 24). Hindwing black with small or large transparent areas in cells; vein Cu_1 arising from somewhat before lower angle of cell; angle between cross vein and M_3 very narrow; veins A_1 and A_2 well developed (Fig. 24).

Male genitalia (Figs 25, 26). Uncus long, well developed, less strongly sclerotized apically, with simple setae laterally; tegumen short; gnathos consisting of three pointed hooks; tuba analis well developed, ventral edge well sclerotized (Figs 25a, 26a); valva relatively short, with dorsal half covered with strong hand-shaped setae (Fig. 25c), a row of such setae medially and a stripe of pointed setae subventrally, crista sacculi with a patch of strong pointed setae (Figs 25b, 26b); saccus short, not pointed apically, shorter than vinculum (Figs 25d, 26c); aedoeagus longer than valva, with one or two sclerotized plates dorso-apically (Figs 25e, 25f, 26d).

Female genitalia (Fig. 31). Papilla analis well developed; 8th sternite less strongly sclerotized but with a strongly sclerotized edge anteriorly; posterior apophysis relatively short, thickened medially; anterior apophysis somewhat shorter than posterior apophysis, with a small spine basally; antrum short, with a small sclerotized ring; ductus bursae very long and narrow; corpus bursae long and evenly shaped, with small, not sclerotized transversal folds; without signa.

Differential Diagnosis. *Scoliokona tetrapora* (Diakonoff, 1968), comb, nov., was described in the African genus *Sura* Walker, 1856 (type species: *S. xylocopiformis* Walker, 1856). It

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differs from *Scoliokona* in the venation (forewing without stalked veins), in proboscis (not developed) and in habitus (abdomen not depressed, wings not narrowed) (*cp.* Gaede, 1929). The genitalia of *Sura* are not yet known.

Based on the hand-shaped setae of the valva, *Scoliokona* is close to *Nokona* Matsumura, 1931, *Adixoa* Hampson, 1893 and *Pramila* Moore, 1879 (*cp.* Gorbunov & Arita, 1995). From all it differs in the habitus (abdomen very long and slender, depressed, wings very long and narrow), the venation (acute angle between cross vein and M_3 in hindwing), by the specialised tufted scales on segments 6 and 7 of abdomen (absent in the genera compared) and by the long tufted scaling of the labial palpus (with depressed scales in the genera compared). From all related genera it differs also in certain characters of the genitalia : in the sclerotized plate or plates in the aedoeagus (absent in *Adixoa* and *Nokona*), in the well separated row of hand shaped setae of the valva medially (absent in the genera compared), in the short saccus (longer in the genera compared).

Scoliokona tetrapora (Diakonoff), **comb. nov.** (Figs 13, 14, 24, 25, 31)

Sura tetrapora Diakonoff, 1968 : 228, figs 345, 713–714. Type locality : "Luzon, Prov. Limay, Bataan" [Philippines]. Holotype female, in USNM ; Heppner & Duckworth, 1981 : 25.

The female was described and figured in detail by Diakonoff. Here we give the description of the hitherto unknown male and report the species from Mindanao for the first time.

Description. Male (Fig. 13). Alar expanse 46–49 mm ; body length 27–29 mm ; forewing 21–22 mm ; antenna 10–10.5 mm.

Head : antenna black with bluish lustre, ventrally towards apex brownish, scape covered with white scales, bipectinate-clavate, cilia basally as long as diameter of antenna ; frons black ; labial palpus black, basal and medial joint with long tufted scales, medial joint ventrally with white tipped scales ; vertex black ; pericephalic hairs black. Thorax : black, shining ; mesothorax with a few white scales dorso-laterally. Legs : almost entirely black, coxae with some white scales basally ; mid tarsus with basal tarsomere orange yellow scaled distally ; hind tibia with black tufted hair-like scales mixed with a very few white scales and a few orange and white scales distally ; hind tarsus with basal tarsomere with orange scales distally. Abdomen : black with bluish sheen ; segments 2, 3 and 4 somewhat depressed laterally and dorso-ventrally ; tergite 2 with narrow white stripe latero-posteriorly ; sternites mixed with white scales ; sternites 1+2 with patches of white-grey scales medially ; segments 6 and 7 with long tufted black scales both dorsally and ventrally ; anal tuft black, with few white scales laterally.

Forewing : very narrow, black with a bluish lustre, especially on underside ; small area close to wing base between cubitus and anal margin less densely covered with scales, sometimes transparent, cilia black. Hindwing : mainly black ; oval transparent area in cell proximally of discal spot and in cells between veins M_3 and Cu_1 (small, in distal half of wing), Cu_1 and A_1 (very large), A_1 and A_2 (very small) and between A_2 and anal margin (medium sized) ; cilia black.

Male genitalia (genital preparation No. AK3) (Fig. 25). Uncus long, well developed, less strongly sclerotized apically, with simple setae laterally ; tegumen short ; gnathos consisting of two lateral finger-shaped, pointed hooks ; tuba analis well developed, ventral edge well-sclerotized (Fig. 25a) ; valva broad, ovoid and relatively short, with dorsal half covered with strong hand-shaped setae (Fig. 25c), a row of such setae medially and a stripe of pointed

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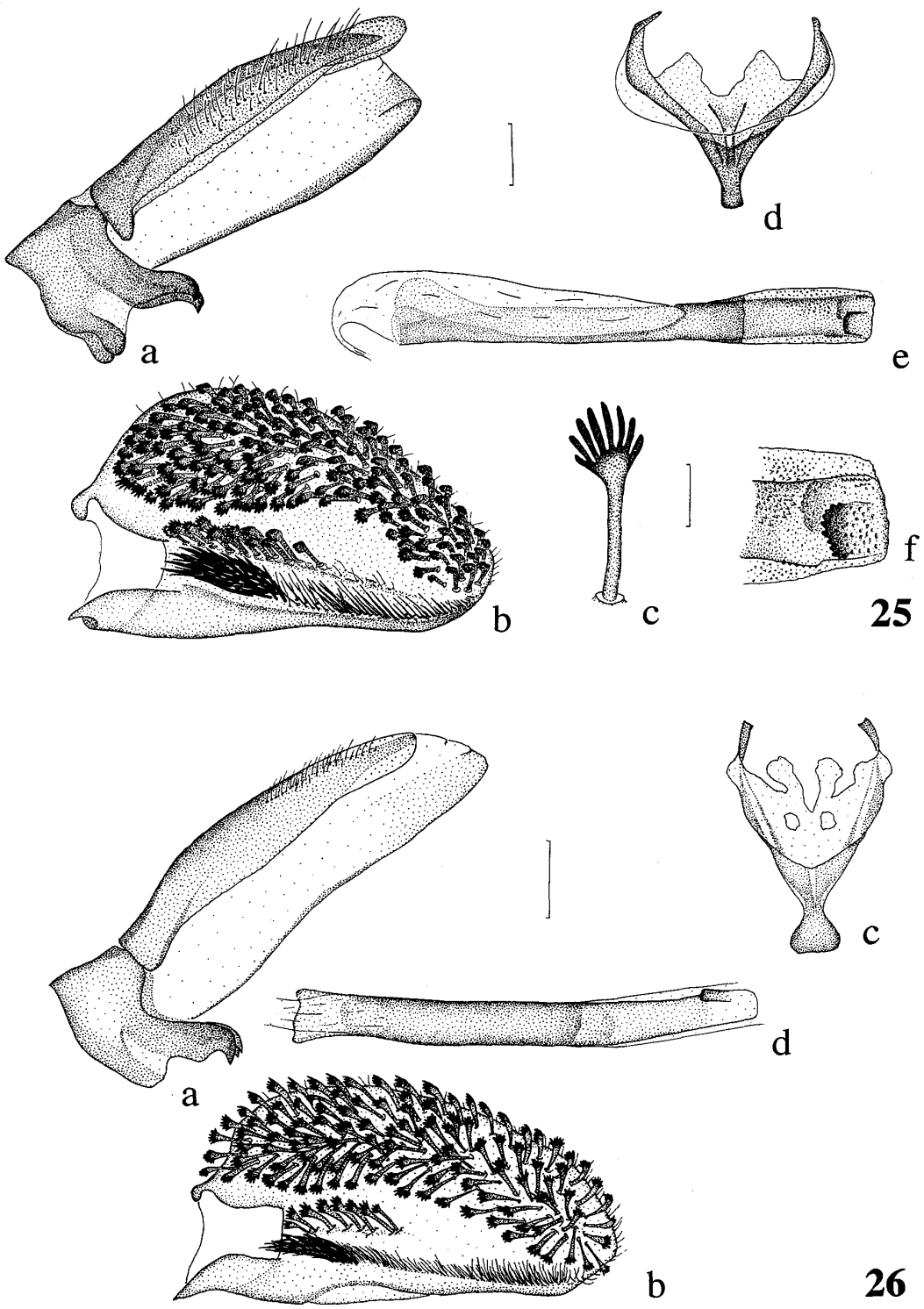

Figs 25–26. Male genitalia. 25. *Scoliokona tetrapora* (Diakonoff) (genital preparation No. AK3) (ZMHU). a. Tegumen-uncus complex. b. Valva. c. Seta from inner surface of valva. d. Saccus. e. Aedoeagus. f. Apex of aedoeagus. Scale bar (a, b, d, e) : 0.5 mm. Scale bar (c, f) : 0.1 mm. 26. *S. heptapora* sp. nov., paratype (genital preparation AK73) (ZMHU). a. Tegumen-uncus complex. b. Valva. c. Saccus. d. Aedoeagus. Scale bar : 0.5 mm.

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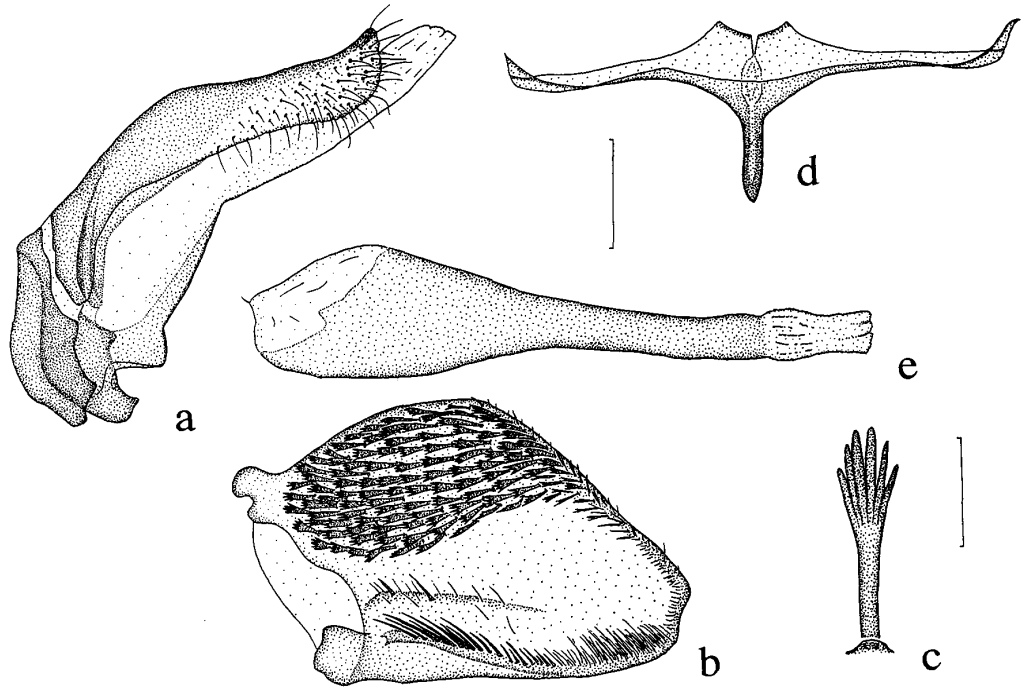

Fig. 27. Male genitalia of *Nokona palawana* sp. nov. (genital preparation GA-026) (ZMKD). a. Tegumen-uncus complex. b. Valva. c. Seta from inner surface of valva. d. Saccus. e. Aedoeagus. Scale bar (a, b, d, e) : 0.5 mm. Scale bar (c) : 0.1 mm.

setae subventrally, crista sacculi with a patch of strong pointed setae (Fig. 25b) ; saccus short, not pointed apically, shorter than vinculum (Fig. 25d) ; aedoeagus longer than valva, with two sclerotized plates dorso-apically (Figs 25e, f).

Female (Fig. 14). The female specimen at hand differs from the males in the pattern of transparent areas of the hindwing (transparent area between Cu_2 and A_1 shorter, between M_3 and Cu_1 absent) and colouration of abdomen (tergites 5 and 6 lateral with narrow white stripes).

Female genitalia (genital preparation No. AK41) (Fig. 31). See generic diagnostic characters.

Variability. The male specimens vary in alar expanse between 37 and 48 mm (average *ca* 44 mm), females between 44 and 48 mm ; two males with only extremely small transparent area in cell between A_1 and A_2 ; one male with additional transparent area of hindwing between M_1 and M_2 (distal of discal spot).

Diagnosis. *Scoliokona tetrapora* is somewhat similar to *Sura phoenicia* Hampson, 1919 from Borneo, *Sura ignicauda* (Hampson, 1882) from Burma, *Sura pryeri* Druce, 1882 from Malacca, *Sura cyanea* Hampson, 1919 from Java and *Sura uncariae* Schneider, 1940 from Sumatra. From all it differs in the size and number of the transparent areas of the hindwing (with only two or three small basal transparent areas in the species compared) and partly in the colouration of the anal tuft (red in *ignicauda* and *pryeri*). The generic position of the species to which *S. tetrapora* is compared should be carefully checked.

Bionomics and habitat. The host plant is unknown. Moths were collected in April and in November at altitudes of 90 and 700 m.

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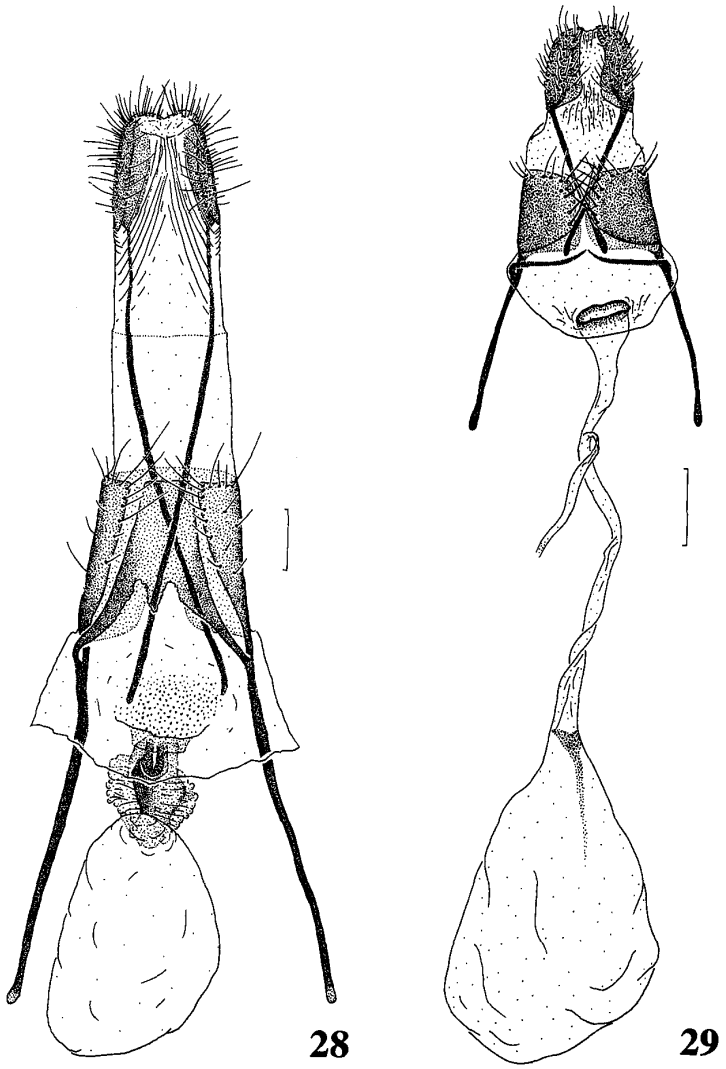

Figs 28–29. Female genitalia. 28. *Cyanosesia treadawayi* sp. nov., paratype (genital preparation No. AK42) (CCT). 29. *Melittia ferroptera* sp. nov., paratype (genital preparation AK1) (CCT). Scale bar : 0.5 mm.

Distribution. This species is known from Luzon and Mindanao.

Material examined. 5 ♂, Philippinen, Luzon, Prov. Benguet, östlich [east of] Baguio, Adunot River, 700 m, 20. IX. 1997, leg. Ebert, Mey & Nuß (ZMHU, CAK) ; 10 ♂, Philippinen, [Mindanao], Quezon, Infanta, Magsaysay, 9–10. IV. 1997, 90 m, leg. Mey & Speidel (1 ♂ with genitalia examined by A. Kallies, prep. No. AK3) (ZMHU, MUT, CAK) ; 1 ♀, Schadbg. 1890., [Philippines] Mindanao/genitalia examined by A. Kallies, prep. No. AK41 (NHMW).

***Scoliokona heptapora* sp. nov.** (Figs 15, 26)

Description. Male (holotype) (Fig. 15). Alar expanse 39.0 mm ; body length 24.0 mm ; forewing 18.0 mm ; antenna 9.0 mm.

Head : antenna black with bluish lustre, scape white ventrally ; frons black, with white stripes laterally ; labial palpus long, extending beyond base of antenna ; basal and medial joints with long tufted scales ; basal joint black, with white scales basally and internally ;

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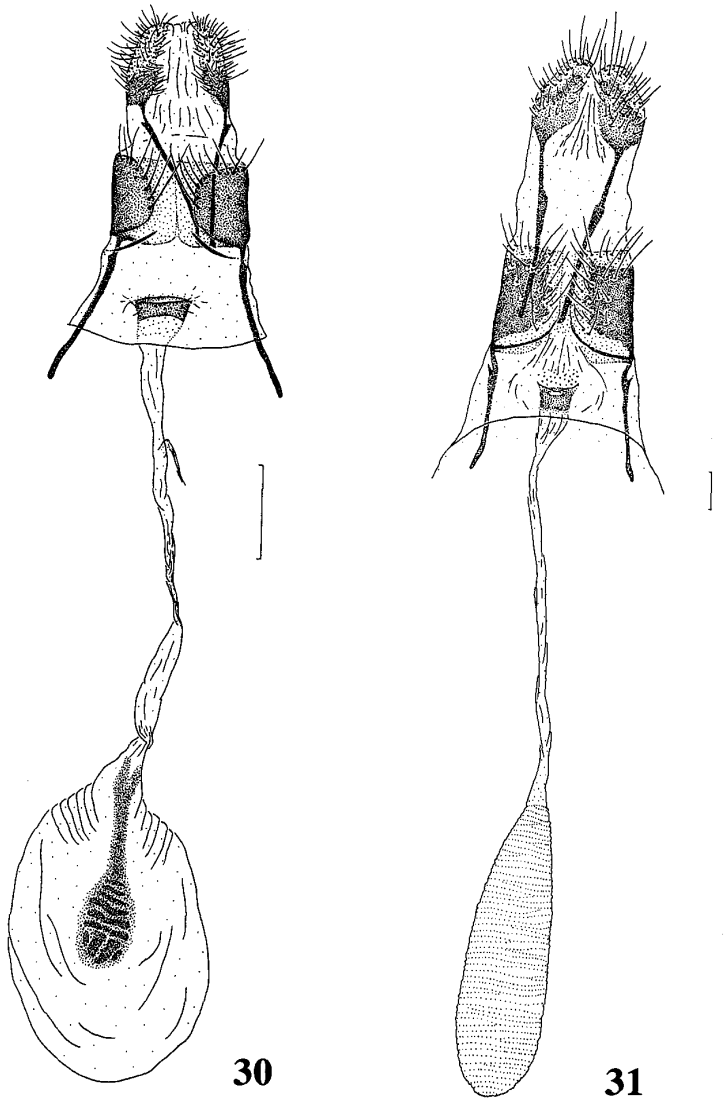

Figs 30–31. Female genitalia. 30. *Melittia callosoma* Hampson (genital preparation No. AK17) (CCT). 31. *Scoliokona tetrapora* (Diakonoff) (genital preparation AK41) (NHMW). Scale bar : 0.5 mm.

medial joint black, with a white stripe dorso-laterally, ventrally with white tipped scales ; apical joint with appressed scales, black, ventrally mixed with white ; vertex black ; pericephalic hairs black, laterally white. Thorax : black, shining ; mesothorax with few white scales dorso-laterally. Legs : almost entirely black, coxae with a few white scales basally ; hind tibia with black tufted hair-like scales mixed with a very few white scales, spurs yellow ; basal tarsomere of hind tarsus with orange-yellow dorsal spot distally. Abdomen : black with bluish sheen ; segments 3 to 5 somewhat depressed laterally and dorso-ventrally ; tergite 2 with narrow white stripe latero-posteriorly ; tergites 4 and 5 with narrow transverse white stripe laterally ; segments 6 and 7 with long tufted black scales both dorso-laterally and ventrally ; anal tuft black.

Forewing : narrow, black with bluish lustre, especially on underside ; cilia black. Hindwing : black ; large oval transparent areas in all cells except cell between Cu_1 and Cu_2 ; anal area black.

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Male genitalia (paratype, genital preparation No. AK73) (Fig. 26). Close to *S. tetrapora*. Gnathos consisting of two lateral finger-shaped, pointed hooks and a short hook medially (Fig. 26a); valva ovoid, short, relatively narrow, with dorsal half covered with strong hand-shaped setae, a row of such setae medially and a stripe of pointed setae subventrally, crista sacculi with a patch of strong pointed setae (Fig. 26b); saccus very short, shorter than vinculum, well broadened apically (Fig. 26c); aedoeagus slightly longer than valva, with one sclerotized plate dorso-apically (Fig. 26d).

Female. Unknown.

Variability. Specimens to hand are almost without variation in size (alar expanse 38 to 39 mm). Occasionally the white stripes of the abdomen are reduced to just a few scales.

Diagnosis. The new species cannot be confused with any other related species. From *S. tetrapora* it can be distinguished easily by the almost entirely transparent hindwing (seven large transparent areas).

Bionomics and habitat. The host plant is unknown. Moths were collected in April at altitudes of 150 and 650 m.

Distribution. This species is known from Leyte I. and Samar I., Philippines.

Material examined. Holotype, ♂, Philippinen, Leyte, Lake Danao, 650 m, 14–17. IV. 1997, leg. Mey & Speidel (ZMHU). Paratypes. 3 ♂, with same data as holotype (1 ♂ with genitalia examined by A. Kallies, prep. No. AK73) (ZMHU, CAK); 18 ♂, Philippinen, Samar, Cadacan, 22–24. IV. 1997, 150 m, leg. Mey & Speidel (ZMHU, MUT, CAK).

Sura cyanolampra Diakonoff (Fig. 16)

Sura cyanolampra Diakonoff, 1968: 229, figs 331, 711–712. Type locality: "Luzon, Los Banos" [Philippines]. Holotype male, in USNM; Heppner & Duckworth, 1981: 25.

The species was described and figured in detail by Diakonoff (1968). Like *Scoliokona tetrapora* he placed the species in the African genus *Sura*. Unfortunately there is no male specimen known yet, but most likely this species belongs neither to *Sura* nor to *Scoliokona*. Possibly it could be assigned to the genus *Phlogothauma* Butler, 1882 (type species: *P. scintillans* Butler, 1882). However, the type species of that genus has not been studied in detail yet. Therefore we treat *S. cyanolampra* in its original combination. It is figured in colour for the first time.

Distribution. Only known from the Philippine Island of Luzon.

Bionomics and habitat. Unknown. One specimen (paratype) was collected at the beginning of September, another in April.

Material examined. 1 ♀ (Fig. 16), Philippines, Luzon I., S.E., Mt. Isarog, 20–23. IV. 1982, Y. Takanami leg. (MUT).

Nokona heterodesma (Diakonoff), **comb. nov.** (Fig. 17)

Paranthrene heterodesma Diakonoff, 1968: 230, figs 327, 339, 715–717. Type locality: "Luzon, Mt. Makiling" [Philippines]. Holotype male, in USNM; Heppner & Duckworth, 1981: 23.

The species was described in full detail and figured by Diakonoff, 1968. According to the genitalia and superficial characters it belongs to the genus *Nokona* Matsumura, 1931. It

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differs from all congeners by the rather well-developed ETA of forewing both in male and female.

Variability. Alar expanse between 35.0 and 38.0 mm.

Habitat and bionomics. Specimens were collected in March and April at altitudes of about 300 to 1,000 m.

Distribution. Known from Luzon and Negros I., Philippines.

Material examined: 1 ♀, Phil[ippines]. C[entral]. Luzon, 1000, Cavite, Ternate, 7. III. 1989, leg. Treadaway (CCT); 1 ♀ (Fig. 17), Philippines, Negros Occ., 1,000 m, Mt Canlaon, 16. IV. 1982, leg. Dodong (CCT); 1 ♀, P[hilippine]. I[slands], [South East Luzon] Camarines Sur, Mt Iriga, 500–600 m, 21. IV. 1962/H. M. Torrevillas, Collector, Bishop Museum (BMHH).

***Nokona palawana* sp. nov.** (Figs 18, 27)

Description. Male (holotype) (Fig. 18). Alar expanse 31.0 mm; body length 14.0 mm; forewing 14.0 mm; antenna 7.0 mm.

Head: antenna black, posterior end reddish-brown; vertex blackish; frons blackish-brown, both sides densely mixed with white scales; pericephalic hairs white; labial palpus dark brown, basal joint with yellow scales, posterior half of medial joint mixed with white scales ventrally, terminal joint blackish-brown. Thorax: blackish-brown; patagia and tegula blackish-brown. Legs: blackish-brown; base of fore coxa yellow; mid leg blackish-brown; hind leg blackish-brown; hind tibia blackish-brown, inside of posterior half yellow; hind tarsus blackish-brown, inside of posterior 2/3 yellow except last segment. Abdomen: tergite blackish-brown; sternites 3–8 with yellow band posteriorly; anal tuft dorsally blackish-brown, medially with long white scales, ventrally brown.

Forewing: blackish-brown, basal 1/3 light brown, with a yellow spot on base; costal margin blackish. Hindwing: hyaline; veins blackish-brown; discal spot narrow; terminal margin very narrow, blackish-brown.

Male genitalia (holotype, genital preparation No. GA-026) (Fig. 27). Uncus well-developed, with long hair-like setae latero-apically, gnathos with only two small lateral hooks (Fig. 27a); valva (Fig. 27b) ovoid, short, broad, with dorsal half covered with relatively narrow hand-shaped setae (Fig. 27c), medially a narrow crista with simple hair-like and a very few strong pointed setae, subventrally a row of hair-like setae continuing to the crista sacculi with strong pointed setae; saccus very short, pointed apically, vinculum very long and straight (Fig. 27c); aedoeagus simple, longer than valva, broadened basally (Fig. 27d).

Bionomics and habitat. The type specimen was collected near the forest edge at an altitude of about 600 m on 6th of September.

Distribution. Known only from the type locality on Palawan I., Philippines.

Remarks. Quite likely this species will prove to belong to a genus different from *Nokona*. The shape of gnathos, vinculum and valva, the distribution of the setae on the inner surface of the valva and the type of labial palpus are somewhat different from those of typical *Nokona* species. However, with only a single male we cannot yet find a more convincing combination. The genera of the tribe Paranthrenini are urgently in need of revision.

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Material examined. Holotype, ♂, Philippines, Palawan, Mantalingajan, Pinigasan, 600 m, 7. IX. 1961. Noona Dan Exp[edition]. [19]61-62/Caught in Malaise-traps outside forest/ Genitalia examined by O. Gorbunov & Y. Arita, Preparation No GA-026/ma. Genitalia on slide No. 1677, Y. Arita 1995 (ZMKD).

Acknowledgements

We express our special cordial thanks to Mr C. G. Treadaway, Limbach, Germany and Dr Wolfram Mey (ZMHU) for the loan of the extensive material of Sesiidae. We are also indebted to Dr O. Karsholt (ZMKD), Dr M. Lödl (NHMW), Dr S. E. Miller (BMHH), Dr W. Nässig (SFML) and Dr G. S. Robinson (BMNH) for the loan of additional specimens under their care.

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Zusammenfassung

Ergebnisse neuer Untersuchungen an Glasflüglern (Sesiidae) von den Philippinen werden vorgestellt. Eine neue Gattung, *Scoliokona* gen. nov., Typusart *Sura tetrapora* Diakonoff, 1968, und 6 neue Arten werden beschrieben: *Cyanosesia treadawayi* sp. nov., *Cyanosesia meyi* sp. nov., *Trilochana illustris* sp. nov., *Melittia ferroptera* sp. nov., *Scoliokona heptapora* sp. nov. und *Nokona palawana* sp. nov. Die folgenden neuen Kombinationen werden eingeführt: *Cyanosesia pelocroca* (Diakonoff, 1968), comb. nov. und *Nokona heterodesma* (Diakonoff, 1968), comb. nov. Eine Art, *Melittia callosoma* Hampson, 1919, wird wiederbeschrieben und erstmals für die Philippinen und für Sulawesi, Indonesien, genannt. Weitere neue faunistische Daten werden für *Trilochana triscoliopsis* Rothschild, 1925, *Melittia gorochovi* Gorbunov, 1988, *Melittia javana* Le Cerf, 1916, *Scoliokona tetrapora* (Diakonoff, 1968), *Sura cyanolampra* Diakonoff, 1968 und *Nokona heterodesma* (Diakonoff, 1968) aufgeführt. Zusätzlich wird die kürzlich beschriebene *Cyanosesia philippina* Gorbunov & Kallies, 1998 abgebildet.

摘　　要

フィリピンのスカシバガ（鱗翅目，スカシバガ科）の稀種と新種（Axel Kallies・有田　豊）

フィリピンのスカシバガは Diakonoff (1968) によりまとめられたが，種の多様性と多くの固有種を有する膨大な島々からわずかに 17 種類が記録されたに過ぎない．第一著者は C. G. Treadaway 氏（リンバッハ・ドイツ）から彼の数度に渡る蝶蛾の遠征調査から得られたスカシバガの標本と 1997 年に W. Mey と W. Speidel 両博士（二人ともフンボルト大学博物館）がこの地域でスカシバガの合成フェロモンで得た標本を入手した．これらの標本をもとにイギリス，デンマーク，フランス，ドイツ，オーストリア，日本，アメリカなどの博物館や大学に所蔵されているフィリピンのスカシバガの標本の研究を行った．その結果 7 つの新タクサ，2 種の属の変更，1 種の新記録，6 種の新しいデータの記録を行った．

1. *Cyanosesia treadawayi* sp. nov. (Figs 1, 2, 19, 28)

雌雄で色彩斑紋がかなり異なる．レイテ島産．

2. *Cyanosesia pelocroca* (Diakonoff), comb. nov.

Glossosphecia 属のもとに記載されたが，Diakonoff (1968) の図から *Cyanosesia* 属なのは明かなので所属を変更した．

3. *Cyanosesia meyi* sp. nov. (Figs 3, 20)

前後翅ともに透明な種類でサマール島から採集された．

4. *Cyanosesia philippina* Gorbunov & Kallies (Fig. 4)

前種に良く似ているが，前翅の横脈紋や腹部の色彩などで区別される．ミンダナオ島から記録された．

5. *Trilochana triscoliopsis* Rothschild (Fig. 5)

この巨大なスカシバガは 4 月中旬にレイテ島のダナオの標高 650 m のところで，スカシバガの合成性フェロモンで午前の遅くに 2 雄が採集された．しかしその合成性フェロモンは特定されていない．

6. *Trilochana illustris* sp. nov. (Figs 6, 21)

Trilochana 属のほかの種類とは，前後翅が半透明の茶褐色であることで容易に区別される．ほかのこの属の種類の前後翅は黒みがかったブルーかグリーンである．ミンダナオ島で 4 月に得られた．

7. *Melittia ferroptera* sp. nov. (Figs 7, 8, 9, 22, 29)

このモモブトスカシバはミャンマーから記録された *M. tabanus* に良く似ているが前翅の横脈紋，後

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脚脛節の色彩などで区別される．レイテ島，ミンダナオ島，セブ島，ルソン島などから採集された．

8. *Melittia callosoma* Hampson (Figs 11, 12, 23, 30)

北ボルネオから記載された *M. eurytion* (Westwood, 1848) に良く似た種類であるが今回フィリピンのミンダナオ島，ネグロス島，ミンドロ島，ルソン島およびインドネシアのスラウェシ島からも新しく記録した．

9. *Melittia javana* Le Cerf

この種はすでにフィリピンのネグロス島から記録があるが，さらに今回ミンダナオ島とシキホル島から記録した．

10. *Melittia gorochovi* Gorbunov (Fig. 10)

この種はベトナム，タイ，北インド (シッキム) などから記録がある．今回新たに中国 (雲南)，ラオス，ミャンマー，フィリピン (ルソン島) などから記録した．

Scoliokona gen. nov. (Figs 13, 14, 15, 24, 25, 26, 31)

Type species : *Sura tetrapora* Diakonoff

種 *tetrapora* はアフリカの属 *Sura* Walker のもとに記載されたが，東洋熱帯のこの種群は翅脈，口吻などが異なるので，別属を設けた．本属は *Nokona* Matsumura, 1931, *Adixoa* Hampson, 1893, *Pramila* Moore, 1879 などに近い属である．

11. *Scoliokona tetrapora* (Diakonoff) (Figs 13, 14, 24, 25, 31)

後翅の透明部分の形や数，尾端総毛の色彩に種の特長が現われる．ルソン島とミンダナオ島から知られている．

12. *Scoliokona heptapora* sp. nov. (Figs 15, 26)

この新種は前種に比べて後翅の透明部分大きく，7室になっている．レイテ島とサマール島から記録された．

13. *Sura cyanolampra* Diakonoff (Fig. 16)

Sura 属のもとに記載されたが，その所属を検討すべきであるが雌の標本が得られているのみで雄は未知であるので *Sura* 属のままにしておいた．ルソン島から知られている．

14. *Nokona heterodesma* (Diakonoff), comb. nov. (Fig. 17)

Diakonoff (1968) によって *Paranthrene* 属で記載されたが，ゲニタリアなどは明かに *Nokona* 属の特徴を示しているので所属を変えた．ルソン島とネグロス島から記録されている．

15. *Nokona palawana* sp. nov. (Figs 18, 27)

パラワン島から得られたホロタイプ標本1頭のみが知られている．ゲニタリアはこの属の特徴をよく示している．

(Accepted March 16, 1998)

Published by the Lepidopterological Society of Japan,
5-20, Motoyokoyama 2, Hachioji, Tokyo, 192-0063 Japan

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